AMENDMENTS TO THE SPECIFICATION

Please replace the paragraph appearing at page 6, lines 4-8, of the specification with the following paragraph:

According to one embodiment of this invention, the X1 of the first amino acid sequence is S. According to another embodiment of this invention, the X2 the first amino acid sequence is G. According to yet another embodiment of this invention, X3 of the first amino acid sequence is S. According to one embodiment, the first amino acid sequence is a sequence selected from the group consisting of TISGSD (SEQ ID NO:8), TITNSD (SEQ ID NO:11) and TISGSW (SEQ ID NO:17).

Please replace the paragraph appearing at page 6, lines 9-14, of the specification with the following paragraph:

According to yet another embodiment of this invention, X3 of SEQ ID NO:115 is S or A. According to yet another embodiment of this invention, X4 of SEQ ID NO:115 is Y. According to yet another embodiment of this invention, X5 of SEQ ID NO:115 is G or A. According to yet another embodiment of this invention, X6 of SEQ ID NO:115 is N or A. According to one embodiment, SEQ ID NO:115 is a sequence selected from the group consisting of ~~GRISPYGNTN~~ GRISPYGGNTN (SEQ ID NO:9), ATIYPYGGYTY (SEQ ID NO:12) and AWIAPYSGATD (SEQ ID NO:18).

Please replace the paragraph appearing at page 6, lines 15-24, of the specification with the following paragraph:

According to one embodiment of this invention, the X1 of SEQ ID NO:116 is A. According to another embodiment of this invention, the X2 of SEQ ID NO:116 is R. According to yet another embodiment of this invention, X4 of SEQ ID NO:116 is L or M. According to one preferred embodiment of this invention, the aromatic amino acid present in X5-X8 is a tryptophan residue. According to another embodiment, one amino acid of X5-X8 is missing. According to yet another embodiment of this invention, X9 of SEQ ID NO:116 is F. According to one embodiment, X10 of SEQ ID NO:116 is D. According

to one embodiment of this invention, X11 of SEQ ID NO:116 is Y. According to one embodiment, the SEQ ID NO:116 is a sequence selected from the group consisting of CARVGGLKLLFDY (SEQ ID NO:10), CARGGGMDGYVMDY (SEQ ID NO:13) and CAREGGLYWVFDY (SEQ ID NO:19).

Please replace the paragraph appearing at page 6, line 25, through page 7, line 9, of the specification with the following paragraph:

An antibody according to this invention can comprise (a) a first amino acid sequence comprising the sequence TISGSD (SEQ ID NO:8); (b) a second amino acid sequence comprising the sequence ~~GRISPYGNTN~~ GRISPYGGNTN (SEQ ID NO:9); and (c) a third amino acid sequence comprising the sequence CARVGGLKLLFDY (SEQ ID NO:10), or a variant of said antibody. Alternatively, an antibody according to this invention can comprise (a) a first amino acid sequence comprising the sequence TITNSD (SEQ ID NO:11); (b) a second amino acid sequence comprising the sequence ATIYPYGGYTY (SEQ ID NO:12); and (c) a third amino acid sequence comprising the sequence CARGGGMDGYVMDY (SEQ ID NO:13); or a variant of said antibody. Alternatively, an antibody according to this invention can comprise (a) a first amino acid sequence comprising the sequence TISGSW (SEQ ID NO:17); (b) a second amino acid sequence comprising the sequence AWIAPYSGATD (SEQ ID NO:18); and (c) a third amino acid sequence comprising the sequence CAREGGLYWVFDY (SEQ ID NO:19); or a variant of said antibody. Alternatively, an antibody according to this invention can comprises (a) a first amino acid sequence comprising the sequence TISNYG (SEQ ID NO:20); (b) a a second amino acid sequence comprising the sequence GRISPSNGSTY (SEQ ID NO:21); and (c) a third amino acid sequence comprising the sequence CAKCSVRFAY (SEQ ID NO:22); or a variant of said antibody. Alternatively, an antibody according to this invention can comprise (a) a first amino acid sequence comprising the sequence TINNYD (SEQ ID NO:14); (b) a second amino acid sequence comprising the sequence GYISPPSGATY (SEQ ID NO:15); and (c) third amino acid sequence comprising the sequence CARMVGMRRGVMDY (SEQ ID NO:16); or a variant of said antibody.

Please replace the paragraph appearing at page 12, lines 17-25, of the specification with the following paragraph:

FIG.1 shows an alignment of amino acid sequences encoding STOP-1 from a wide variety of species - human ~~(SEQ ID NO:1)~~ (SEQ ID NO:3), mouse ~~(SEQ ID NO:3)~~ (SEQ ID NO:4), rice fish ~~(SEQ ID NO:4)~~ (SEQ ID NO:5), zebrafish ~~(SEQ ID NO:5)~~ (SEQ ID NO:6) and chicken ~~(SEQ ID NO:6)~~ (SEQ ID NO:7). A consensus sequence is also provided. The arrow indicates a signal sequence cleavage site. Red indicates residues conserved in all species. Capitalized letters in the consensus sequence indicates residues that have been conserved throughout all species. Lower case letters in the consensus sequence indicate residues that are conserved in most species. Residues that that are not conserved in those species appear as a "period." "!" indicates I or V. "$" indicates L or M. " % " indicates F or Y. "#" indicates B, D, E, N, Q or Z.

Please replace the paragraph appearing at page 12, lines 27-29, of the specification with the following paragraph:

FIG.2 shows ~~a nucleic~~ an amino acid sequence ~~encoding~~ of human STOP-1 (SEQ ID NO:3). A signal sequence is indicated by the boxed amino acids. A triple helix domain is indicated by an underline. A glycosylation site is at amino acid 186.

Please replace the paragraph appearing at page 15, lines 23-26, of the specification with the following paragraph:

FIG.18 shows the amino acid sequences of the CDRs of several phage-derived antibodies having affinity for human STOP-1. "H1," "H2" and "H3" refer to V_H-CDR1, V_H-CDR2 and V_H-CDR3. The numerical header generally corresponds to amino acid positions 28-33, 49-58 and 92-102 according to the Kabat numbering system. The SEQ ID NOs for the listed sequences are as follows:

H1	H2	H3	Ab Name
SEQ ID NO:8	SEQ ID NO:9	SEQ ID NO:10	S7
SEQ ID NO:11	SEQ ID NO:12	SEQ ID NO:13	S16
SEQ ID NO:14	SEQ ID NO:15	SEQ ID NO:16	F5, F6

| SEQ ID NO:17 | SEQ ID NO:18 | SEQ ID NO:19 | S4, F13, F37 |
| SEQ ID NO:20 | SEQ ID NO:21 | SEQ ID NO:22 | S9 |

Please replace the paragraph appearing at page 17, lines 2-6, of the specification with the following paragraph:

FIG.25A-H describe amino acid sequences and a nucleic acid sequence for a phage display anti-Her-2 Fab. More specifically, FIG.25 shows an amino acid sequence comprising an anti-Her-2 Fab light chain (SEQ ID NO:86), an amino acid sequence comprising an anti-Her-2 Fab ~~light~~ heavy chain region (SEQ ID NO:87) and the nucleic acid sequence of a phagemid encoding the amino acid sequences (SEQ ID NO:88).

Please replace the paragraph appearing at page 36, line 27, through page 37, line 14, of the specification with the following paragraph:

The term "antibody" is used in the broadest sense and specifically covers, for example, single anti-STOP-1 monoclonal antibodies (including agonist, antagonist, and neutralizing antibodies), anti-STOP-1 antibody compositions with polyepitopic specificity, polyclonal antibodies, single chain anti-STOP-1 antibodies, and fragments of anti-STOP-1 antibodies (see below) as long as they specifically bind a native STOP-1 polypeptide and/or exhibit a biological activity or immunological activity of this invention. According to one embodiment, the antibody binds to an oligomeric form of STOP-1, e.g., a trimeric form. In a further embodiment, the antibody specifically binds to human STOP-1 between residues 94-243. According to another embodiment, the antibody specifically binds to STOP-1, which binding can be inhibited by a monoclonal antibody of this invention (e.g., a deposited antibody of this invention, etc.). The phrase "functional fragment or analog" of an antibody is a compound having a qualitative biological activity in common with an antibody to which it is being referred. For example, a functional fragment or analog of an anti-STOP-1 antibody can be one which can specifically bind to a STOP-1 molecule. In one embodiment, the antibody can prevent or substantially reduce the ability of a STOP-1 molecule to induce cell proliferation. The term "immunoglobulin" (Ig) is used interchangeably with "antibody" herein. According

to one embodiment, an antibody of this invention does not bind to a peptide having the amino acid sequence GWNSVSRIIIEELPK (SEQ ID NO:117).

Please replace the paragraph appearing at page 128, lines 23-32, of the specification with the following paragraph:

Nucleic acid molecules containing human, mouse and zebra fish STOP-1 were obtained by using PCR. Sequences with homology to human, mouse and zebra fish STOP-1 can be found in the Genebank database mouse EST: AK003674; chicken ESTs: Al585129, AL585130; rice fish ESTs: BJ490431, BJ498080, BJ510203, BJ504730; and zebra fish ESTs: AL727874, AW595388; and HGT AL844521. ~~Nucleic~~ Amino acid sequences of human, mouse, rice fish, zebra fish and chicken STOP-1 ~~nucleic acid molecules~~ are described in SEQ ID NOS: 3, 4, 5, 6, and 7 ~~1,3, 5, 7 and 9, respectively. Their amino acid sequences are recited as SEQ ID NOS: 2, 4, 6, 8 and 10~~, respectively, and FIG.1. The cDNAs of human STOP-1 were deposited under the terms of the Budapest Treaty with the American Type Culture Collection (ATCC), 10801 University Blvd., Manassas, VA 20110-2209, USA as described below:

Please replace the paragraph appearing at page 155, lines 24-30, of the specification with the following paragraph:

To generate F(ab)'$_2$ displayed on phage, the ~~PV0350-4~~ pV0350-2b vector was further modified by inserting a dimerizable leucine zipper GCN4 sequence (GRMKQLEDKVEELLSKNYHLENEVARLKKLVGERG) (SEQ ID NO:84) between the HC and cP3 sequences by cassette mutagenesis. The GCN4 leucine zipper brings two sets of LC/HC-cP3 fusion polypeptides together in the *E. coli* periplasm and presents the dimer on the surface of phage. This F(ab)'$_2$ phagemid vector is referred to as pV0350-4 (FIGs.~~27~~26A-H) and can be schematically illustrated as FIG.24B.

Please replace the paragraph appearing at page 158, lines 20-28, of the specification with the following paragraph:

FIG.18 shows a partial amino acid sequence of several of the binders that had higher affinity and specificity (e.g., S7, S16, F5, ~~S9~~S4, F13, F47 and S9). Three clones share identical CDR sequences - - F13, F47 and S4. S7 and S16 also share some sequence homology. Based on the sequence homology between F13, F47, S4, S7, S9 and S16 in their V_H-CDR1, V_H-CDR2 and V_H-CDR3 regions, consensus sequences for the commonly recognized epitope were derived. Amino acid and nucleic acid sequences coding for a phage display S4-Fab, a phage display S9-Fab, a phage display S7-F(ab)'2, a phage display S16-F(ab)'2, a phage display F5-F(ab)'2 can be found in FIGs.27A-C, FIGs.28A-C, FIGs.29A-C, FIGs.30A-C and FIGs.31A-C, respectively. <u>S7 has SEQ ID NOS: 8-10. S16 has SEQ ID NOS: 11-13. F5 has SEQ ID NOS: 14-16. S4, F13 and F47 have SEQ ID NOS: 17-19. S9 has SEQ ID NOS: 20-22.</u>

Please replace the table starting on page 173, under the heading "<u>SEQUENCE LISTING KEY</u>" at line 7, with the following:

SEQ ID	Description
1	DNA76393-1664
2	amino acid sequence of DNA76393-1664
3	alternative STOP-1 amino acid sequence
4	mouse STOP-1 amino acid sequence
5	rice fish STOP-1 amino acid sequence
6	zebra fish STOP-1 amino acid sequence
7	chicken STOP-1 amino acid sequence
8	S7 - first amino acid sequence
9	S7 - second amino acid sequence
10	S7 - third amino acid sequence
11	S16 - first amino acid sequence
12	S16 - second amino acid sequence
13	S16 - third amino acid sequence

14	F5 - first amino acid sequence
15	F5 - second amino acid sequence
16	F5 - third amino acid sequence
17	S4 - first amino acid sequence
18	S4 - second amino acid sequence
19	S4 - third amino acid sequence
20	S9 - first amino acid sequence
21	S9 - second amino acid sequence
22	S9 - third amino acid sequence
23	RT-PCR hybridization probe
24	RT-PCR forward primer
25	RT-PCR reverse primer
26	Template sequence
27	Primer sequence
28	Primer sequence
29	Primer sequence
30	Primer sequence
31	Primer sequence
32	Primer sequence
33	Primer sequence
34	Primer sequence
35	Primer sequence
36	Primer sequence
37	Primer sequence
38	Primer sequence
39	Primer sequence
40	Primer sequence
41	Primer sequence
42	Primer sequence

43	Primer sequence
44	Primer sequence
45	Primer sequence
46	Primer sequence
47	Primer sequence
48	Primer sequence
49	Primer sequence
50	Primer sequence
51	Primer sequence
52	Primer sequence
53	Primer sequence
54	Primer sequence
55	Primer sequence
56	Primer sequence
57	Primer sequence
58	Primer sequence
59	Primer sequence
60	Primer sequence
61	Primer sequence
62	Primer sequence
63	Primer sequence
64	Primer sequence
65	Primer sequence
66	Primer sequence
67	Primer sequence
68	Primer sequence
69	Primer sequence
70	Primer sequence
71	Primer sequence

72	Primer sequence
73	Primer sequence
74	Primer sequence
75	Primer sequence
76	Primer sequence
77	Primer sequence
78	Primer sequence
79	Primer sequence
80	Primer sequence
81	Primer sequence
82	Primer sequence
83	Primer sequence
84	GCN4 leucine zipper
85	Oligo containing terminator sequence
86	an amino acid sequence comprising an anti-Her-2 Fab light chain
87	an amino acid sequence comprising an anti-Her-2 Fab ~~light~~ heavy chain region
88	a nucleic acid sequence of a phagemid encoding SEQ ID NOs: 86 and 87 (pv0350-2b)
89	an amino acid sequence comprising an anti-Her-2 F(ab)'$_2$ light chain
90	an amino acid sequence comprising an anti-Her-2 F(ab)'$_2$ heavy chain region
91	a nucleic acid sequence of a phagemid encoding the amino acid sequences of SEQ ID NOs:89 and 90 (pv0350-4)
92	an amino acid sequence comprising an S4-Fab light chain
93	an amino acid sequence comprising an S4-Fab heavy chain region
94	a nucleic acid sequence encoding the amino acid sequences of SEQ ID NOs:92 and 93
95	an amino acid sequence comprising an S9-Fab light chain

96	an amino acid sequence comprising an S9-Fab heavy chain region
97	a nucleic acid sequence encoding the amino acid sequences of SEQ ID NOs:95 and 96
98	an amino acid sequence comprising an S7-F(ab)'₂ light chain
99	an amino acid sequence comprising an S7-F(ab)'₂ heavy chain region
100	a nucleic acid sequence encoding the amino acid sequences of SEQ ID NOs:98 and 99
101	an amino acid sequence comprising an S16-F(ab)'₂ light chain
102	an amino acid sequence comprising an S16-F(ab)'₂ heavy chain region
103	a nucleic acid sequence encoding the amino acid sequences of SEQ ID NOs:101 and 102
104	an amino acid sequence comprising a F5-F(ab)'₂ light chain
105	an amino acid sequence comprising an F5-F(ab)'₂ heavy chain region
106	a nucleic acid sequence encoding the amino acid sequences of SEQ ID NOs:104 and 105
107	an amino acid sequence comprising an S4-Fab light chain
108	an amino acid sequence comprising an S4-Fab heavy chain region
109	a nucleic acid sequence of a vector encoding the amino acid sequence if SEQ ID NOs:107 and 108 (pv0120-S4)
110	an amino acid sequence comprising an S4 IgG Light Chain
111	a nucleic acid sequence of a vector encoding the amino acid sequence of SEQ ID NO:110 (LPG3.HumanKappaG6)
112	an amino acid sequence comprising an S4 IgG Heavy Chain
113	nucleic acid sequence of a vector encoding the amino acid sequence of SEQ ID NO:112 (LPG4.HumanHC-S4)
114	Consensus Amino Acid Sequence of FIG.1

115	An H2 consensus sequence
116	An H3 consensus sequence
<u>117</u>	<u>Polypeptide sequence</u>